

D, is worked by the engine, C. The fires in the close furnaces are thus kept in activity, and under complete control, and the products of combustion are allowed to rush out at a high velocity under the bilges of the ship, at a temperature of from 500° to 1000°; the discharge-pipe when inside, or in contact with the ship, being surrounded by a non-conducting medium. When the products of combustion have attained the temperature of 500°, their tendency is to rush out even against a pressure of 15 lbs. per square inch; and when liberated, they do rush out at the rate of 1,332 feet per second, each of such hot blasts through 1 foot area of discharge-pipe under water giving an impulsive action equal to 4,173 lbs. These discharged products cannot condense as steam would, and they cannot escape through the water without giving the full extent of their impact, and thus propelling the vessel. I do not yet venture to determine whether a high velocity of discharge from a small area, or a lower velocity of discharge from a larger area, will be found the best in practice.

#### THE EARL OF KILMOREY'S NEW MANSION, ST. MARGARET'S, ISLEWORTH.

In the beautiful park on the banks of the Thames, between Richmond and Isleworth, formerly belonging to the Marquis of Ailes, a mansion has been recently erected for the Earl of Kilmorey, under the superintendence of Mr. Lewis Vulliamy, architect. A few weeks ago, floating pleasantly on the Thames, in an afternoon to be remembered, we came suddenly upon it, and were surprised by its size and extent. Our readers have here a view of it.

The building is faced with a light-coloured brick, and has red brick quoins and dressings. The cornices, balustrades, architraves, &c. of windows, the basement story, and the portico, are of Portland stone and Portland cement.

The principal parts of the domestic offices are in the basement story; but the kitchen is in a detached building of an octagon form.

On the entrance front is a Doric portico, approached by a flight of stone steps; opening from this is the entrance-hall, 50 feet by 25 feet. In the centre of the hall is a broad flight of nine steps, rising to the level of the principal story. Each end of the hall, right and left, will be decorated with sculpture. At the top of the steps, and entered from the hall, is an octagon vestibule, 14 feet diameter, in the centre of the principal suite of rooms which lie along the garden front; and beyond the vestibule is the conservatory, which projects in the centre of the garden front. On the right and left of the vestibule are ante-rooms, size, 17 feet by 16 feet 6 inches each, fitted up with bookcases; from these the dining-room and drawing-room are approached, the dining-room being on the right hand, and the drawing-room on the left; each of these is 35 feet by 22 feet. Beyond these, and terminating the suite, are the gentleman's study at one end and the lady's boudoir at the other; size of each, 13 feet 6 inches by 22 feet 6 inches. On the left of the entrance-hall is the principal staircase, and on the opposite side a room to be used as a museum of antiquities.

The dimensions of the block of the building are 154 feet 6 inches by 57 feet 6 inches; and the cost, as contracted for by Messrs. W. Cubitt and Co. is 16,920*l*.

Do you know the neighbourhood, reader? It is full of pleasant places and interesting recollections. At Richmond, where Thompson "sang the seasons and their change," Queen Elizabeth died, and Charles the First made the Park. It was formerly called Sheen, or shining:—

"Say, shall we ascend thy hill, delightful Sheen?"

And if the philologists be right in giving the same root to "shining" and "beauty," we need no other reason for the title. Henry the Seventh changed the name when he rebuilt the palace. In the church here, Thompson, the poet, and Keats, the actor, were buried. At Kew, Sir Peter Lely lived, and Gainsborough lies. At Barn Elms we are reminded of Poisson, and the Kit Kat Club; and if we continue on to Putney, we may remember that there was born Gibbon, the historian of the Roman Fall.

#### DRAINAGE OF HIGHGATE.

RECENTLY two poor laundresses were summoned before Messrs. Chester, Warner, and Herring, magistrates, at the Highgate Petty Sessions, by Mr. Bird, the road surveyor, for allowing soap-suds and other filth to accumulate on and about their habitations in a place called Swaine's-lane, near the Highgate Cemetery. The defendants severally admitted the charge; but excused themselves on the ground that there was no convenience wherein to deposit the matters in question.

Mr. Herring was very unwilling to punish the defendants: the parish officials were at fault, and were not in court with clean hands.

Complainant said there was neither money nor power to make a drain.

Mr. Chester said that was all nonsense. He exonerated the complainant, individually, from blame, but the parish authorities were utterly regardless of the comforts of the ratepayers. As to want of authority to form a drain, it was a mere subterfuge, for the law was imperative on a surveyor to "scour, cleanse, and keep clean all open drains and gutters in a public highway, and see to a proper drainage." The vestry (St. Pancras) were ever at war with the legitimate interests of the inhabitants at large, and the chief surveyor had not done his duty. Should a nuisance over which the authorities had control come near his (the chairman's) abode, he would soon see whether the law was not strong enough to teach them a lesson. The defendants had been guilty of an offence against the law, and as the court was bound to convict, it would do so in the penalty of 1*l*. and costs instead of 40*s*.

#### SITE OF NEW CATTLE MARKET.

To the public the selection of a good site for a new cattle-market is of the highest importance. Agreeing entirely in your observations respecting the contemplated selection of Copenhagen-fields, allow me to suggest publicly, through THE BUILDER, a situation which I have, in private, mentioned in several quarters, some months since. I allude to the East Ham Level, opposite Woolwich, a locality which, in my opinion, is superior to every other situation, having the ready-made and three-fold advantage of approach by river, railway, and road. For the Level is bounded on its south margin by the Thames, which bears all the traffic from Holland and Scotland past the very spot; the North Woolwich Railway terminates in the Level itself; and the Ilford and Barking roads, the great highways from the Eastern Counties, form the northern boundary. The Level contains between three and four thousand acres of fine pasture land, some hundreds of which might be procured at less cost than the seventy-two acres in Copenhagen-fields, the price of which, 700*l*. per acre, is, in truth, a building speculation sum,—a fact which speaks for itself as to the wisdom of the selection of this site, which, not being three miles from Smithfield, is contrary to stipulation, an objection alone sufficient to condemn the choice.\*

The North Woolwich Railway is already in part, and may be easily altogether, connected with all the railways north of the Thames, and that noble highway would connect the East Ham Level with the railways on its south bank, affording also a cheap mode of transit, by ferry, already provided, to the supply of animals from Kent, and thus there would be no excuse for a single animal being driven through the streets of London in future.

There would be no occasion for an expensive outlay in such a locality, whilst its very

\* We have received four other letters to this same effect, but apprehend that their writers are in error in supposing that the Act for Removal of Smithfield Market contains a stipulation that will prevent the adoption of Copenhagen Fields as the site for the new market. It may be formed in any situation that may appear to the commissioners convenient for the purpose, provided it be approved by one of her Majesty's principal Secretaries of State. The misapprehension has probably arisen from the concluding paragraph of clause 2, which says:—"And no new market for the sale of cattle or horses shall be opened in the city of London or Westminster, or the borough of Southwark, or at any place distant less than seven miles in a straight line from St. Paul's Cathedral, in the city of London." But the commencement of the clause sets forth the opening previously of the markets provided under this Act.—Ed.

position affords every facility for the carriage of building materials; and the vicinity of the river will give the market, free of charge, an inexhaustible supply of water for flushing and cleansing purposes, to say nothing of the opportunity of preserving and removing the manure. One great inconvenience of a cattle-market with limited resources arises from the necessity of driving off the unsold cattle, to be brought again, perhaps from a great distance, on a subsequent market-day. To obviate this, the situation should be able to command a large extent of pasturage, and to foreign beasts a week's feeding in fresh meadows after a sea voyage would prove highly beneficial.

Looking at a map of London and its neighbourhood, it appears to me that the locality I have ventured to suggest is without a rival in its many (and possessing water-frontage unequalled) advantages, whilst the access to it is already provided for in various modes of rapid conveyance, and that, at all events, for an eastern, if not for a central, market, no situation can be more desirable in respect of economy, convenience, salubrity, and freedom from nuisance.

GEORGE RUSSELL FRENCH.

#### TO HARDEN TAR.

In reply to your correspondent who asks respecting "tar," pitch, in the proportion of 3 lbs. to one gallon of tar, boiled together, will make the tar set quite hard and quick.

G. O.

To one gallon of Stockholm tar, put one pint of good old boiled oil, and, when heated nearly to boiling, add 3 lbs. of litharge and a ½ lb. of white copperas, well stirring the whole together over the fire until it becomes properly mixed. The natural colour of the tar is not materially altered by the incorporating of the driers; and, if colour is not an object, a small quantity of pure Venetian red, added and mixed with the litharge at the same time, will be found to improve it. This proportion of the ingredients is applicable to new work; but if to be applied to work, either wood or canvas, that has been covered before, 1½ lb. of litharge, and half the quantity of copperas, will be sufficient: too much of the driers may cause cracks, and, if on canvas, its flexibility may be lessened by the same cause.

Z. Z.

#### DISFIGUREMENT OF THE ROYAL EXCHANGE.

##### INTERFERENCE WITH ARCHITECTS' WORKS.

AFTER an absence of many months on the continent in search of health, I returned to London only a few days since. On passing the Royal Exchange, I was greatly grieved to see the works in progress for bringing forward the shop-fronts on the south side and south-east corner of that building. As, however, I had delivered over the edifice to my employers, the Joint Grand Gresham Committee, on its completion, and its management and control rested entirely with that body and their surveyor, I felt I had no right to occupy the public with my regrets, whether personal or professional. Some of my friends, however, have drawn my attention to a paragraph in your valuable paper of the 22nd ult. referring to a previous communication of the 22nd May, in which your correspondent desires to know by whose sanction these changes have been made, or, in his own words, "to fix the laches on some one, as poor Mr. Nobody is often the wrong doer." To preserve silence after this question is thus asked, would imply that the alterations had, at least, been made with my sanction; and to prevent this erroneous conclusion, I beg you to permit me to say, that in a letter I addressed to the committee from Pisa on the 3rd January of this year, I protested most strongly against the proposed changes, and adduced such reasons as I hoped would have satisfied that body that they ought not to be made. I never received any answer whatever to this appeal, but I was informed that the commissioners applied subsequently to my friend Mr. Cockerell to undertake the work, but that that gentleman, finding that the change was contrary to my strongly expressed opinion, declined to interfere.

WILLIAM TITE.